



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,886	03/16/2001	John N. Hait	2807.2.20.3	7460

35430 7590 11/21/2003

GARY L. EASTMAN  
707 BROADWAY STREET, SUITE 1800  
SAN DIEGO, CA 92101

EXAMINER

SEDIGHIAN, REZA

ART UNIT	PAPER NUMBER
----------	--------------

2633

DATE MAILED: 11/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/810,886

Applicant(s)

HAIT, JOHN N.

Examiner

M. R. Sedighian

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

1. The specification is objected because of the following informalities:
  - a) The reference numeral "58c, 58d" in line 17 of page 13, should change to ---56c, 56d ---.

Correction is required for further informalities.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 11, it recites the limitation "the ultra-narrowband signal" in line 1. There is insufficient antecedent basis for this limitation in the claim.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohya et al. (US Patent No: 6,556,327).

Regarding claims 1, 6, and 12, Ohya teaches a method for providing a hyper-dense photonic signal (col. 14, lines 20-37, the signal light generated by semiconductor laser 65 in fig. 15A and 72 in fig. 17A), comprising: providing a photonic carrier (65, fig. 15A and 72, fig. 17A); providing first information (the 40-channel AM video signal shown in figs. 15A and 17A)

Art Unit: 2633

having a first bandwidth corresponding thereto (the 40-channel AM video signal can have a first bandwidth); modulating (col. 14, lines 37-45 and 73, fig. 17A) the photonic carrier (the output light of semiconductor laser) to embody the first information therein (col. 14, lines 38-45 and col. 15, lines 25-30). Ohya differs from the claimed invention in that Ohya does not specifically disclose a photonic bandwidth that is less than a first bandwidth. Ohya in one embodiment (fig. 15A) discloses the output spectrum (66, fig. 15B) of the laser source (65, fig. 15A) has broadened sidebands each having broader bandwidth (col. 14, lines 41-44). Ohya also discloses the 40-channel video signal is included in these sidebands (col. 14, line 45). Ohya in a different embodiment (fig. 17A) discloses an optical transmission (72, fig. 17A) and modulation (73, fig. 17A) system, wherein the spectrum of output light (74, fig. 17B) has a narrower bandwidth (col. 15, lines 30-34) than the spectrum of output light generated by laser transmitter of the other embodiment (66, 15B). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention that an optical signal transmission and modulation system such as the one shown in fig. 17A of Ohya can provide a photonic bandwidth that is less than the bandwidth of information signal being carried by the system in order to transmit a high quality signal over a longer distance. As to claim 6, Ohya teaches a composite signal comprising the photonic carrier and a photonic sideband associated therewith (66, fig. 15B and 74, fig. 17B) and segregating the photonic carrier from a portion of the side band (col. 15, lines 30-34). As to claim 12, Ohya teaches selectively attenuating photonic sideband associated with the photonic signal (col. 15, lines 30-34).

Regarding claim 2, Ohya discloses photonic modulation (73, fig. 17A) the photonic carrier (72, fig. 17A).

Regarding claim 3, Ohya discloses maintaining the energy of the hyper-dense photonic signal substantially within the photonic bandwidth (col. 14, lines 40-45).

Regarding claims 4-5, Ohya discloses photonic modulating remains substantially devoid of generating photonic sidebands (col. 15, lines 30-32).

Regarding claim 7, Ohya discloses segregating an upper sideband and a lower sideband from the photonic carrier (66, fig. 15B and fig. 16B and 74, fig. 17B)

Regarding claim 8, Ohya discloses selectively attenuating the photonic sidebands associated with the photonic carrier (col. 15, lines 31-32).

Regarding claim 10, Ohya discloses detecting (79, fig. 18) the hyper-dense signal and producing an output signal therefrom (col. 15, lines 42-65).

Regarding claim 11, Ohya discloses transmitting (col. 15, lines 59-65) the signal to a destination (77, fig. 18) prior to detection (79, fig. 18).

Regarding claim 13, Ohya discloses most of the energy corresponding to the photonic signal is segregated into frequencies exclusive of the suppressed sidebands (col. 15, lines 34-36, 59-63).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohya et al. (US Patent No: 6,556,327) in view of Dutt et al. (US Patent No: 5,867,290).

Art Unit: 2633

Regarding claim 9, Ohya differs from the claimed invention in that Ohya does not teach passing the optical signal through a depressive photonic element. Dutt teaches a depressive photonic element (22, fig. 1) such as diffraction grating that spreads the spectrum of a modulated (12, 14, fig. 1) light beam (col. 4, lines 45-58). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a photonic depressive element such as the one of Dutt for the optical transmission and modulation system of Ohya in order to provide distinct spectral bands that can be used for further signal analysis or measurements.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (703) 308-9063. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

*M. R. Sedighian*  
M. R. SEDIGHIAN  
Patent Examiner  
Art Unit : 2633